UNITED STATES DEPARTMENT OF AGRICULTURE
Extension Service
Washington 25, D. C.

EXTENSION AGRONOMY STATEMENT

What are the major problems of the extension agronomy program?

To develop a sound, economical program of crop production covering both cash and feed crops.

This requires:

(1) Crops of high quality.
(2) Economical production.
(3) Crops that meet the market demand.
(4) Crop system that fits the individual farm.
(5) Proper land use.

Good seed is the first requirement for profitable crop production.

By good seed I mean seed of highest quality and of the best approved varieties developed by our plant breeders, both State and Federal. Plant breeders are continually developing new and improved varieties of crops to meet the demands of the commercial trade and varieties that will better withstand diseases.

Proper tillage methods and fertilization are needed to insure the best returns or these new and improved varieties will not bring the best returns.

Major Phases of Work

In cash crops such as wheat, corn, soybeans, and cotton the most important problems undertaken have been the development of seed supplies from the best varieties developed by our plant breeders.

This work has been done in cooperation with the State crop improvement associations (of which there are 38 now in operation) in developing a uniform program of inspection and certification so that the seed produced in one State might meet the requirements of other States with similar conditions.

Under this program the small amount of foundation seed produced by the State and Federal plant breeders is multiplied under careful supervision and sufficient pure seed, of high genetic quality, is produced to furnish from 2 to 5 percent of the seed required for planting the various crops. In turn, farmers in general can purchase seed from farmers growing first- or second-generation seed, and the result is that most of the seed needed is of good quality, free from mixtures and not more than 3 or 4 years removed from the plant breeders' seed.

979(6-46)

Seed Certified

	1944 (Bushels)	1945 (Bushels)
WHEAT		
HARD RED WINTER	460,650	1,173,895
HARD RED SPRING	289,718	661,044
SOFT RED WINTER	386,856	666,218
WHITE	107,243	195,012
DURUM	47,440	61,580
Total -	1,291,907	2,757,749
OATS		
SPRING	2,033,846	2,525,694
WINTER	416,934	463,299
BARLEY		
SPRING	323,924	392,503
WINTER	133,149	168,604
HYBRID CORN	3,552,723	3,172,423

Abundant pasture (both permanent and rotation) and forage, to meet the needs of livestock for feed, are fully as important as cash crops. One of the most important developments in the forage program is the production of new varieties of grain sorghum, which are of greatest value in the Plains States, especially the Southern Plains, where, because of uncertain weather conditions, the grain sorghums are replacing corn as a more dependable feed crop. In developing the grain sorghum varieties, special attention has been given to the combine varieties. Here, again, good seed supplies are important. In 1945, a total of 739,460 bushels of grain sorghum seed was certified, much of this amount being of the improved varieties.

Pasture mixtures have been found to be more profitable than single-grass or legume crops. Such mixtures are in use in all parts of the country, for humid-area and irrigated and dry-land pastures and also for winter pasture crops in the Southeastern States.

An example of the value of good pasture mixtures is to be found in the use of Ladino clover, with a grass mixture, for dairy pastures, in the Eastern and New England States. Many farmers say that Ladino clover has revolutionized the dairy pasture problems of these States.

Another example is the development of winter pastures in the South. Crimson clover and such grasses as annual ryegrass, winter oats, and winter rye are used. When such a pasture is seeded early in the fall, with proper attention to fertilizer needs of the land, it produces a tremendous amount of feed and makes possible the carrying of dairy and beef cattle through the winter with a minimum of grain and hay.

What has been said of pastures is equally important in hay production. In all of the States they are finding that a legume and grass mixture produces not only a better hay crop but also one of finer quality, especially for dairy and meat animals.

The need for seed supplies for pasture and forage production is very acute and has been one of the most difficult to meet. In the agronomy program this need is being met by shipping to heavy-producing areas, for multiplication, the foundation seed grown in another area. In this program the plant breeders of the State and Federal stations are working with the extension agronomists and the State crop improvement associations.

Clover is a good example. Foundation seed of two varieties - Cumberland and Midland - is produced in the South and in the Central States, respectively, and sent to the Northwestern States for multiplication. In 1945, 377,947 pounds of Cumberland and 454,613 pounds of Midland seed were produced. All of this seed was certified and will be used in the Central and Eastern States for seed this spring. Both of these varieties are resistant to the diseases that attack the common varieties of clover. Although these amounts of seed are small, they will go a long way toward restoring clover to its proper place in the various States.

Another example is alfalfa, where disease has made it almost impossible to keep alfalfa stands for more than 2 or 3 years. Two new varieties of alfalfa have been produced by our plant breeders and are resistant to disease. These are Ranger and Buffalo. In 1945, 42,955 pounds of Ranger and 33,714 pounds of Buffalo seed were certified, and this seed will be a start in producing a better and longer-lived alfalfa crop.

A start has been made with new and improved grasses such as timothy, bromegrass, and ryegrass. In 1945, 8,998 pounds of timothy, 618,095 pounds of bromegrass, and 4,967,182 pounds of ryegrass were certified. These amounts, of course, are small, but, as seed supplies are accumulated, they will help in developing the seed supplies needed for both pasture and forage mixtures that are proving so profitable in our livestock feeding program.

Fertilizers and Lime

The problem of fertilizers and lime is growing, especially during these years, when farmers are endeavoring to meet the heavy demands for feed and cash crops.

Fertilizer materials were scarce during the war years but, due to the work of a special fertilizer committee in the Department of Agriculture, working with the fertilizer trade and the State experiment stations, a program was developed that reduced the fertilizer formulas used in each State, which helped to make the limited amount of fertilizers go a long way toward meeting the most pressing needs of the States. This program will continue and will be of tremendous help not only in 1946 but also in future years, as the farmers have come to realize more fully than ever the economic value is using the fertilizers best suited to their needs and in the most economical amounts.

The use of limestone has increased during the last few years, largely through the AAA program of furnishing limestone through Government and commercial sources, on the practice payment basis. Many farmers who had never used lime before have begun to use lime and others who have used only small amounts have been induced to increase the amounts used as a cash outlay is not required. Although there has been a tremendous increase in the amount of limestone used, there is still need for much more to be used, and many farmers who have seen the value of limestone should continue to use larger amounts.

Erosion Control

Erosion control has been a great help in more profitable crop production, and the extension agronomists have cooperated in this program in many ways. Probably one of the most important is the cover crop program in the South. The value of winter cover crops has been well sold to Southern farmers, and the acreage seeded to cover crops has now reached the place where the problem of seed supply is the limiting factor.

Most of the seed for the cover crop program is grown in the Northwestern States. However, a few years ago, at a conference of Southern extension agronomists, it was suggested that they get their own farmers to produce some of the cover-crop seed for their own use. At present several Southern States are producing from 15 to 30 percent of the cover-crop seed for use. This practice gives an additional cash crop to the Southern farmer, and many farmers who would never purchase any seed will use cover crops if they produce their own seed.

I have endeavored to keep the State specialists informed of regulations regarding crop work by maintaining a mailing list of, at least, one specialist in each State. This material has consisted largely of such items as OPA regulations, fertilizer regulations, lists of State formulas, and such other items as would be of special interest to the State specialists. I have not kept a complete record of such material sent out, but it has been enormous and, I hope, to some extent helpful.

Plans and Recommendations for 1946

There is little change in the agronomy program from year to year. In 1946 the problems of seed supply, proper tillage, weed control, and fertilization will be important, if the farmers are able to meet the demands for increased production this year.

Many farmers have been producing exceptionally large crops during the war years and have not given very much attention to the care of their land. There will be need for getting plans under way to get these farming operations on a sound, economic basis. Rotations that take into account a larger acreage in legumes, a sound balance between production of cash and feed crops, and plans for using a larger acreage of farmland for green manure crops are among the problems that must be met.

Farmers will look for guidance, in making these readjustments, to the extension agronomist, both on the State and the Federal level, and there should be regional conferences to develop plans to meet the problems as they arise. The heavy demands for crop production again this year will make it possible to get such plans made and ready for 1947.

In meeting the demands for increased production this year there will be some tendency to force marginal land into crop production. This tendency should be discouraged for two reasons: (1) production on marginal land is usually not profitable; (2) the use of marginal land for crop production will bring a whole group of problems of getting this land back to a stable agriculture.

Field work: In making plans for field work it is my desire to confine such work to definite requests for help, in so far as possible, and, in addition, to attend such conferences as will afford opportunity to meet the extension agronomists from as many States as possible.

Last year I assisted the States of Georgia and South Carolina in developing plans for a sound seed improvement program. I have accepted an invitation to help the State of Washington in developing a crop improvement association, the latter part of this month, and I am planning to spend some time with the crops and soils specialists in Idaho while on this trip. Other field work will include several States in the central group and two or three short trips to States near Washington, D. C.

In all plans for field work with the State extension agronomists I try to make contact with the State and experiment station workers, the SCS field workers, and any other groups having an interest in the agronomy field. These contacts are always made through the local extension agronomist.

I shall also plan to attend a summer conference of the Southern Great Plains Council and the meeting of the International Crop Improvement Association, at which time I meet the extension Agronomists from 35-40 States; also a regional conference of specialists in agronomy, soils, plant pathology, and entomology, from the States of Minnesota, Iowa, Wisconsin, North Dakota, South Dakota, and Montana.

If it is possible to develop other regional programs to work out plans for meeting problems of post-war agriculture, I shall hope to assist in drawing up the programs and to attend any conferences pertaining to them.

In developing the foregoing programs, I shall, of course, expect to have the help of the various members of the BPISAE, as I have had in the past. I shall also hope to help them get material developed by the Bureau to the workers in the various States.

O. S. Fisher

O. S. Fisher
Extension Agronomist

March 6, 1946

Discussion of Program

In discussing the agronomy program, Dr. Salter, Chief of the Bureau of Plant Industry, Soils, and Agricultural Engineering, stated that, due to the tremendous field covered in crops and soils management, one extension specialist cannot be expected to cover the entire program. He also stated that the Bureau has men doing experimental work in many of the States, working with the State Agricultural Experiment Station men, and that they help to get new findings into the agronomy program in the States as fast as new work is developed. In this way, they supplement the work of the State and the Federal extension workers. He also feels that we should continue to have frequent conferences between the extension and the investigational groups here at the Department, in order to plan to get the important work out to the States as speedily as possible. As an example, new varieties of wheat distributed since World War I have added about 100,000,000 bushels to the 1944 spring wheat crop.

Dr. Salter stated that, if it were possible to have a soils management specialist added to the staff, it would strengthen the program. Both Dr. Salter and Dr. Barre stated that, as we now have a cotton specialist on the job, a much broader and better-balanced program can be developed for the Cotton States.

Dr. T. B. Hutcheson, of Virginia, attended the conference, and stated that, in Virginia, they always plan their work so that all-station, teaching, and extension - feel that they have one program and that, by frequent conferences, they, all, work together in developing their programs. He feels that the same should be true in the Federal Service and that the extension workers should depend upon the experimental workers in determining their extension programs.
